

Georgia-Pacific LLC
Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund Site
Supplemental Remedial Investigations/Feasibility Studies
Area 2 Supplemental Remedial Investigation Report

Table 5-1 -- Summary of Data Collected by KRSG and ARCADIS in Area 2

Sampling Event	Event Year	Approximate Sample Dates	Data Source	Media	Analyses (Total Number of Samples)	Data Usability Category ¹	Comments
Biota Sampling							
1993/1994 Aquatic Biota Investigation	1993	Aug 1993 - Oct 1993	KRSG	Fish	Dioxins/Furans (2), Lipid (55), Mercury (33), Pesticides (33), PCB Aroclors (33)	1	The historical biota investigation PCB and lipid data are discussed in Section 2.2 (1993 Remedial Investigation), Section 5.5 (Fish Tissue PCB Concentrations) , Section 6.2 (Temporal analysis of PCB in sediment, water and fish) , Section 7 (Human Health Risk Assessment Summary) , Section 8 (Baseline Ecological Risk Assessment Summary) , Section 9 (PCBs in Fish) , and Appendix H (Pre-SRI Analytical Data for Area 2); and presented in associated tables and figures in the Area 2 SRI Report.
1999 Aquatic Biota Investigation	1999	Oct 1999 - Nov 1999	KRSG	Fish	Lipid (27), PCB Aroclors (27)	4	
Former Plainwell Impoundment TCRA Monitoring Program (Yearling smallmouth bass sampling)	2006	Nov 2006	KRSG	Fish	Lipid (7), PCB Aroclors (7)	1	These fish sampling data are discussed in Section 2.2 (Former Plainwell Impoundment TCRA Monitoring Program), Section 5.5 (Fish Tissue PCB Concentrations) , Section 6.2 (Temporal analysis of PCB in sediment, water and fish) , Section 7 (Human Health Risk Assessment Summary) , Section 8 (Baseline Ecological Risk Assessment Summary) , Section 9 (PCBs in Fish) , and Appendix H (Pre-SRI Analytical Data for Area 2); and presented in associated tables and figures in the Area 2 SRI Report.
	2007	Nov 2007	KRSG	Fish	Lipid (5), PCB Aroclors (5)	1	
	2008	Nov 2008	KRSG	Fish	Lipid (7), PCB Aroclors (7)	1	
2009 Fish Sampling	2009	Oct 2009	KRSG	Fish	Lipid (55), PCB Aroclors (55)	4	2009 Fish Sampling data are discussed in Section 2.2 (Site-wide Fish Sampling), Section 5.5 (Fish Tissue PCB Concentrations) , Section 6.2 (Temporal analysis of PCB in sediment, water and fish) , Section 7 (Human Health Risk Assessment Summary) , Section 8 (Baseline Ecological Risk Assessment Summary) , Section 9 (PCBs in Fish) , and Appendix H (Pre-SRI Analytical Data for Area 2); and presented in associated tables and figures in the Area 2 SRI Report.
Soil Sampling							
1993 Floodplain Investigation	1993	Jul 1993	KRSG	Floodplain Soil	Inorganics (2), Pesticides (2), PCB Aroclors (20), Solids (19), SVOCs (2), TOC (9), VOCs (2)	1	The data are discussed in Section 2.1 (1993 Remedial Investigation), Section 5 (Soils) , Section 9 (PCBs in Area 2 Soils) , and Appendix H (Pre-SRI Analytical Data for Area 2); and presented in associated tables and figures in the Area 2 SRI Report.
2000 Focused Sampling	2000	Jun 2000 - Jul 2000	KRSG	Floodplain Soil	Particle Size (34), PCB Aroclors (38), Solids (38), TOC (38)	2	The data are discussed in Section 2.1 (2000 Supplemental Remedial Investigation), Section 5 (Soils) , Section 9 (PCBs in Area 2 Soils) , and Appendix H (Pre-SRI Analytical Data for Area 2); and presented in associated tables and figures in the Area 2 SRI Report.
2011 Area 2 SRI Soil Sampling	2011	Oct 2011 - Nov 2011	ARCADIS	Floodplain and Bank Soil	Dioxin/Furans (21), Mercury (147), Metals (21), Particle Size (212), Pesticides (21), PCB Aroclors (1153), Solids (1153), SVOCs (21), TOC (212), VOCs (135)	1	The data are discussed in Section 3.5 (Floodplain and Bank Soil Sampling), Section 5 (Soils) , Section 9 (PCBs in Area 2 Soils) , and Appendix D (Area 2 SRI Field Work Data); and presented in associated tables and figures in the Area 2 SRI Report.
2012 Area 2 SRI Supplemental Sampling	2012	Jun 2012	ARCADIS	Floodplain Soil	Particle Size (22), PCB Aroclors (110), Solids (110), TOC (21)	1	
Sediment Sampling							
1993/1994 Sediment Investigation ²	1993/1994	Sep 1993	KRSG	Sediment	Particle Size (38), PCB Aroclors (128), Solids (49), TOC (87)	1	The data are discussed in Section 2.1 (1993 Remedial Investigation), Section 5 (Sediment) , Section 6 (PCB Fate and Transport) , Section 9 (PCBs in Area 2 Sediments) , and Appendix H (Pre-SRI Analytical Data for Area 2); and presented in associated tables and figures in the Area 2 SRI Report.
1993/1994 Sediment Source Investigation	1994	Mar 1994	KRSG	Sediment	PCB Aroclors (18), Solids (19), TOC (5)	4	The data are discussed in Section 2.1 (1993 Remedial Investigation) and Appendix H (Pre-SRI Analytical Data for Area 2). We do not propose to use these data in any analyses.
2000 Geochronological Investigation	2000	Apr 2000	KRSG	Sediment	Geochronology (56), PCB Aroclors (28), PCB Congeners (28), Solids (28), TOC (28)	4	The data are discussed in Section 2 (2000 Supplemental Remedial Investigation), Section 5 (Sediment) , and Appendix H (Pre-SRI Analytical Data for Area 2); and presented in associated tables and figures in the Area 2 SRI Report.
2000 Morrow Dam to Lake Allegan Dam Sediment Sampling	2000	Jun 2000 - Nov 2000	KRSG	Sediment	Particle Size (56), PCB Aroclors (152), PCB Congeners (24), Solids (56), TOC (153)	4	
2000 Residential Sediment Sampling	2000	Dec 2000	KRSG	Sediment	Particle Size (12), PCB Aroclors (14), Solids (12), TOC (14)	4	The data are discussed in Section 2 (2000 Supplemental Remedial Investigation) and Appendix H (Pre-SRI Analytical Data for Area 2). We do not propose to use these data in any analyses.
2011 Area 2 SRI Sediment Sampling	2011	Oct 2011 - Nov 2011	ARCADIS	Sediment	Dioxin/Furans (9), Mercury (42), Metals (9), Particle Size (108), PCB Aroclors (502), Pesticides (9), Solids (502), SVOCs (9), TOC (108), VOCs (38)	1	The data are included in Section 3 (Sediment Sampling), Section 4, Section 5 (Sediment) , Section 6 (PCB Fate and Transport) , Section 9 (PCBs in Area 2 Sediments) , and Appendix D (Area 2 SRI Field Work Data); and presented in associated tables and figures in the Area 2 SRI Report.
2012 Area 2 SRI Supplemental Sampling	2012	Jun 2012	ARCADIS	Sediment	Particle Size (13), PCB Aroclors (93), Solids (93), TOC (13)	1	

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Sampling Event	Event Year	Approximate Sample Dates	Data Source	Media	Analyses (Total Number of Samples)	Data Usability Category ¹	Comments
Surface Water Sampling							
1993/1994 Surface Water Sampling (Farmer Street Bridge) ³	1994	Jan 1994 - Sep 1994	KRSG	Surface Water	Inorganics (2), PCB Aroclors (44), Pesticides (2), SVOCs (2), TSS (44), VOCs (2)	1	The data are discussed in Section 2.3 (1993 Remedial Investigation), Section 5 (Surface Water) , Section 6.2 (Temporal analysis of PCB in sediment, water and fish) , and Appendix H (Pre-SRI Analytical Data for Area 2); and presented in associated tables and figures in the Area 2 SRI Report..
2000/2001 Surface Water Sampling (Farmer Street Bridge and Gun River)	2000/2001	Mar 2000 - Feb 2001	KRSG	Surface Water	DOC (17), PCB Aroclors (49), POC (17), TOC (186), TSS (193)	4	The data are discussed in Section 2.3 (2000/2001 Supplemental Remedial Investigation), Section 5 (Surface Water) , Section 6.2 (Temporal analysis of PCB in sediment, water and fish) , and Appendix H (Pre-SRI Analytical Data for Area 2); and presented in associated tables and figures in the Area 2 SRI Report..
Former Plainwell Impoundment TCRA Monitoring - Surface Water Sampling (Farmer Street Bridge) ⁴	2007	Oct 2007 - Dec 2007	KRSG	Surface Water	PCB Aroclors (39), TSS (39)	1	The data are discussed in Section 2.3 (Former Plainwell Impoundment TCRA Monitoring Program), Section 5 (Surface Water) , Section 6.2 (Temporal analysis of PCB in sediment, water and fish) , and Appendix H (Pre-SRI Analytical Data for Area 2); and presented in associated tables and figures in the Area 2 SRI Report.
	2008	Mar 2008 - Dec 2008	KRSG	Surface Water	PCB Aroclors (150), TSS (152)	1	
	2009	Jan 2009	KRSG	Surface Water	PCB Aroclors (17), TSS (17)	1	
Erosion Pin							
2010/2011 Sediment Transect Survey	2010/2011	Nov 2010 - Jan 2011	ARCADIS	Sediment	No sample collection	NA	The data are discussed in Section 3.3 (Survey and Reconnaissance Work), Section 4, and Appendix D (Area 2 SRI Field Work Data); and presented in associated tables and figures in the Area 2 SRI Report.
2011 Field Reconnaissance	2011	May 2011	ARCADIS	Soil and Sediment	No sample collection	NA	
Erosion Pin Survey	2010	Nov 2010 - Dec 2010	ARCADIS	Erosion Pin	No sample collection	NA	
	2011	Jun 2011 - Aug 2011	ARCADIS	Erosion Pin		NA	
	2012	Jan 2012	ARCADIS	Erosion Pin		NA	

Notes:

- Data categories established by USEPA (USEPA 2009):

Categories 1 and 2 – Data collected following an accepted administrative approval and oversight process. It is not required that these be flagged in the database or in report tables or figures with respect to data usability.

Category 4 – Data collected consistent with an approved QAPP and SOPs in place at the time, but without following an accepted administrative review/approval process or with field oversight. These data may be included as supplemental information with a proper flag, and when used in evaluations or reports, a brief description of the limitations should be included. These data will be flagged as follows: "Data collected without agency review or approval of work plans or field oversight."
- Several cores collected in 1993/94 Sediment Investigation were frozen after collection and analyzed in 1997.
- Sample count includes surface water samples associated with the dredging operation to place a water main across the Kalamazoo River at Farmer Street.
- Sample count includes surface water samples associated with TCRA removal activities.
- Sample count includes duplicate samples.

DOC = dissolved organic carbon
KRSR = Kalamazoo River Study Group
NA = not applicable
PCB = polychlorinated biphenyl
POC = particulate organic carbon
QAPP = Quality Assurance Project Plan
RI = remedial investigation
SOP = Standard Operating Procedure
SRI = supplemental remedial investigation
SVOCs = semivolatile organic compounds
TOC = total organic carbon
TCRA = time critical removal action
TSS = total suspended solids
USEPA = United States Environmental Protection Agency
VOCs = volatile organic compounds